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U.S. Department of Homeland Security
20 Massachusetts Ave., N.W., Rm. 3000
Washington, D.C. 20529-2090



U.S. Citizenship
and Immigration
Services

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FILE:

SRC 07 800 22691

Office: TEXAS SERVICE CENTER Date:

JAN 13 2009

IN RE:

Petitioner:

Beneficiary:

PETITION: Immigrant Petition for Alien Worker as a Member of the Professions Holding an Advanced Degree or an Alien of Exceptional Ability Pursuant to Section 203(b)(2) of the Immigration and Nationality Act, 8 U.S.C. § 1153(b)(2)

ON BEHALF OF PETITIONER:

INSTRUCTIONS:

This is the decision of the Administrative Appeals Office in your case. All documents have been returned to the office that originally decided your case. Any further inquiry must be made to that office.

John F. Grissom
John F. Grissom, Acting Chief
Administrative Appeals Office

DISCUSSION: The Director, Texas Service Center, denied the employment-based immigrant visa petition. The matter is now before the Administrative Appeals Office (AAO) on appeal. The appeal will be sustained and the petition will be approved.

The petitioner seeks classification pursuant to section 203(b)(2) of the Immigration and Nationality Act (the Act), 8 U.S.C. § 1153(b)(2), as a member of the professions holding an advanced degree. The petitioner seeks employment as a senior engineer for the Trane Company, a heating, ventilation and air conditioning manufacturer in Clarksville, Tennessee. The petitioner asserts that an exemption from the requirement of a job offer, and thus of a labor certification, is in the national interest of the United States. The director found that the petitioner qualifies for classification as a member of the professions holding an advanced degree but that the petitioner had not established that an exemption from the requirement of a job offer would be in the national interest of the United States.

On appeal, the petitioner submits a witness letter and a brief from counsel.

Section 203(b) of the Act states, in pertinent part:

(2) Aliens Who Are Members of the Professions Holding Advanced Degrees or Aliens of Exceptional Ability. --

(A) In General. -- Visas shall be made available . . . to qualified immigrants who are members of the professions holding advanced degrees or their equivalent or who because of their exceptional ability in the sciences, arts, or business, will substantially benefit prospectively the national economy, cultural or educational interests, or welfare of the United States, and whose services in the sciences, arts, professions, or business are sought by an employer in the United States.

(B) Waiver of Job Offer.

(i) . . . the Attorney General may, when the Attorney General deems it to be in the national interest, waive the requirements of subparagraph (A) that an alien's services in the sciences, arts, professions, or business be sought by an employer in the United States.

The director did not dispute that the petitioner qualifies as a member of the professions holding an advanced degree. The sole issue in contention is whether the petitioner has established that a waiver of the job offer requirement, and thus a labor certification, is in the national interest.

Neither the statute nor the pertinent regulations define the term "national interest." Additionally, Congress did not provide a specific definition of "in the national interest." The Committee on the Judiciary merely noted in its report to the Senate that the committee had "focused on national interest by increasing the number and proportion of visas for immigrants who would benefit the United States economically and otherwise. . . ." S. Rep. No. 55, 101st Cong., 1st Sess., 11 (1989).

Supplementary information to the regulations implementing the Immigration Act of 1990 (IMMACT), published at 56 Fed. Reg. 60897, 60900 (November 29, 1991), states:

The Service [now U.S. Citizenship and Immigration Services] believes it appropriate to leave the application of this test as flexible as possible, although clearly an alien seeking to meet the [national interest] standard must make a showing significantly above that necessary to prove the "prospective national benefit" [required of aliens seeking to qualify as "exceptional."] The burden will rest with the alien to establish that exemption from, or waiver of, the job offer will be in the national interest. Each case is to be judged on its own merits.

Matter of New York State Dept. of Transportation, 22 I&N Dec. 215 (Commr. 1998), has set forth several factors which must be considered when evaluating a request for a national interest waiver. First, it must be shown that the alien seeks employment in an area of substantial intrinsic merit. Next, it must be shown that the proposed benefit will be national in scope. Finally, the petitioner seeking the waiver must establish that the alien will serve the national interest to a substantially greater degree than would an available U.S. worker having the same minimum qualifications.

It must be noted that, while the national interest waiver hinges on prospective national benefit, it clearly must be established that the alien's past record justifies projections of future benefit to the national interest. The petitioner's subjective assurance that the alien will, in the future, serve the national interest cannot suffice to establish prospective national benefit. The inclusion of the term "prospective" is used here to require future contributions by the alien, rather than to facilitate the entry of an alien with no demonstrable prior achievements, and whose benefit to the national interest would thus be entirely speculative.

We also note that the regulation at 8 C.F.R. § 204.5(k)(2) defines "exceptional ability" as "a degree of expertise significantly above that ordinarily encountered" in a given area of endeavor. By statute, aliens of exceptional ability are generally subject to the job offer/labor certification requirement; they are not exempt by virtue of their exceptional ability. Therefore, whether a given alien seeks classification as an alien of exceptional ability, or as a member of the professions holding an advanced degree, that alien cannot qualify for a waiver just by demonstrating a degree of expertise significantly above that ordinarily encountered in his or her field of expertise.

In an introductory statement submitted at the time of filing, counsel stated:

[The petitioner] is an outstanding researcher/engineer in the field of Mechanical Engineering. . . . He displays remarkable expertise in the study of turbulent flows as well as technology development in Heating, Ventilation, and Air-Conditioning ("HVAC") systems. [The petitioner] has employed his remarkable expertise to make outstanding contributions to this field. . . .

The work that [the petitioner] has accomplished in the field has **caught the eye of other researchers in the field and**, in some cases, **has influenced their own research**. . . .

It is therefore well established that [the petitioner] has produced highly significant contributions that have received considerable attention and have markedly influenced his field. . . .

[The petitioner's] exceptional past accomplishments are not only recognized by his immediate colleagues, but also by **independent, objective reviewers** of his work.

(Counsel's emphasis.) Six witness letters accompanied the petitioner's initial submission. Some of these witnesses have worked closely with the petitioner. [REDACTED] of Lehigh University, Bethlehem, Pennsylvania, where the beneficiary earned two graduate degrees, stated:

[The petitioner's] research interest was in the area of fluid mechanics with a concentration on multiphase flows. While multiphase flows are widely used in industries, this type of flows is very complicated and was a relatively new research area with many mysteries. Wall-bounded multiphase flows are commonly found in power generation, chemical and HVAC industries. . . . During his 4-year research, [the petitioner] successfully discovered many interesting behaviors of two-phase flows in turbulent boundary layer. His research results enhanced the understanding of multiphase flow behavior, which can be used for better design and optimization of industrial processes and systems, and improve their efficiency.

. . . In addition, he performed Computation Fluid Dynamics (CFD) analysis to numerically simulate complicated flow behaviors. CFD analysis is an advanced technology for stimulating fluid flow, heat and mass transfer with a powerful computer and he greatly extended understanding of the complicated multiphase flow he researched.

[REDACTED], now Vice President of Precision Cooling Engineering at Liebert-Emerson Network Power, stated:

I met [the petitioner] at York International in 2002, when, as Director of the Advanced Technology Engineering Department, I interviewed and employed him as a mechanical engineer.

[The petitioner's] first assignment with York was to perform Computational Fluid Dynamics (CFD) analysis on refrigerant liquid carryover in flooded evaporators. In our chiller products using flooded evaporators, it was observed there was liquid carryover from [the] evaporator to the compressor, which degrades system performance and could cause potential damage to the compressor. However the cause of the liquid carryover was not clearly understood and the design rule was based on ad hoc principles, because

it was so complicated. [The petitioner] brought us the advanced two-phase CFD technique so that this complicated two-phase flow could be simulated inside the evaporator and we can better understand its physical characteristics. . . . Based on [the petitioner's] work, the critical design parameters were identified and new design rules were established, which would save almost half a million dollars if all the evaporators were redesigned.

[REDACTED] of the University of Illinois at Urbana-Champaign stated:

I know [the petitioner] through his work in the thermal-fluid sciences in the area of HVAC. I had occasion to interact with him on a technical level when one of his past employers, York International, used me as a consultant to independently review their research program. At that time, I became aware of [the petitioner's] work in technology development. I was impressed by his research and development in the application of computational field dynamics (CFD) to HVAC systems. . . .

In one particularly challenging project, [the petitioner] used CFD to simulate the two-phase flow resulting in refrigerant liquid carryover from evaporators in chillers. Numerical simulations of this kind are not straightforward, and his novel approach pushed forward the state of the art. . . . [The petitioner's] work in this area is extremely important to the energy efficiency of chiller systems used in petrochemical processing, refrigeration, and space conditioning for human comfort. . . .

In view of [the petitioner's] outstanding work in the development of HVAC technology, it is my professional opinion that [the petitioner] shows an extraordinary level of knowledge and skill in CFD and HVAC systems. The work that he does will have impact on petrochemical processing and refrigeration systems in addition to HVAC technology. Taken together, these systems account for roughly one third of the end-use energy consumed by our country.

[REDACTED], Director of Unitary Product Development at Trane, stated:

I hired [the petitioner] in January 2007, as the first New Technology Introduction (NTI) engineer, with an initiative to enhance Trane's ability to tackle the big challenge of raising the energy efficiency to a significantly high level. . . .

[The petitioner] has already demonstrated significant value. He started a micro-channel heat exchanger program to enhance heat transfer performance with micro-channel technology. He innovatively modeled, designed and optimized micro-channel condensers for various unitary products with input of our modeling team and vendor. With this technology, system efficiency can be raised and meanwhile the size and refrigerant charge will be reduced.

[The petitioner] is also in charge of the evaporative condenser development for our large commercial rooftop product. . . . [The petitioner] quickly tackled this project using his excellent analytical approach and created a simulation and design model to simulate this complicated process. He will use the model to design and optimize a family of condensers for the entire product line. Initial test data has shown very good agreement with the model predication [*sic*].

Several witnesses claim not to know the petitioner personally. [REDACTED], a research scientist at the National Institute of Standards and Technology, stated:

I have not worked with [the petitioner]. I base my recommendation solely on [the petitioner's] research and development achievements. . . .

[The petitioner's] research work on fluid mechanics and heat transfer in chiller evaporator, condenser, and oil separator caught my attention because I am also working in the HVAC area. His unique approaches to tackling the challenges in refrigeration systems were very impressive to me.

[The petitioner] introduced Computational Fluid Dynamics (CFD) analysis into research on real refrigeration systems and components. . . . [The petitioner's research using CFD analysis with cutting-edge two-phase flow modeling techniques significantly improved our ability to design chillers. . . . These advances were made possible partly because [the petitioner's] research furthered the understanding of how refrigerant liquid droplets interact with vapor flow in the evaporators. . . .

[The petitioner] has also demonstrated the rare ability to apply sophisticated CFD analysis to real world . . . refrigeration oil separators. . . . His model predicted the complicated multiphase, turbulent flow and reasonably predicted oil separation efficiency. As far as I know, very few people can accomplish what [the petitioner] has done and continues to do in this area of research.

To indicate that the petitioner's impact is not limited to the HVAC industry, [REDACTED], Research Scientist at the Institute of Marine Sciences of Andalucia, Spain, stated:

Although I do not know [the petitioner] personally, I became aware of his research and have read his papers on the subject of turbulent two-phase flows, as it is of interest to me and my work. I am extremely impressed by his research and the great accomplishments he has accomplished in his research area.

My research interest is in interdisciplinary studies, applying new advances in fluid mechanics to the field of ecology. For example, my work involves studying motion of pelagic particles in turbulent flows in the sea. These particles export marine carbon

from the surface to the deep ocean and, therefore, are a key component of the role the ocean has in the planetary geochemical cycles.

[The petitioner's] research in gas-solid two-phase turbulent flows inspired me. The traditional view assumes that an increase in turbulence bears ecological advantages for non-motile groups like diatoms that, otherwise, would settle in deep and unlit waters. However, this assumption has no theoretical ground. [The petitioner] did exceptional numerical and experimental investigations, introducing the effects of the lift force on particle motions and distribution in gas turbulent flows. We followed this new finding and applied it in my research. We carried out experimental studies in the water using different turbulent intensities. We found that phytoplankton settling velocity increases when turbulence intensifies from a lower value to a higher value, typically recorded in the upper mixed layers of lakes and oceans. This finding is similar to the phenomena [the petitioner] unveiled in gas-solid turbulent flow. If [the petitioner] had not uncovered this phenomenon, it would have taken us a long time, if ever, to have discovered what we did in the phytoplankton settling velocity.

The petitioner also submitted copies of published articles, manuscripts, and conference abstracts, but no documentary evidence of the impact of those writings.

On December 20, 2007, the director issued a request for evidence. The director acknowledged that the petitioner "submitted one letter of recommendation stating that the author had applied the beneficiary's findings in his own research." The director requested "additional evidence that the beneficiary's research has had an impact in his field," such as documented citation of the petitioner's published work.

In response to the notice, the petitioner submitted copies of two articles containing citations to the petitioner's work. One of the citing articles is a 2004 article by [REDACTED], referring to his work with phytoplankton as discussed in his previously submitted letter. Two citations is not, by itself, strong evidence of impact in the field, but [REDACTED] letter illuminates the value of the petitioner's contribution to the project described in that letter.

The petitioner also submitted additional letters from independent witnesses. [REDACTED] of the University of Birmingham, United Kingdom, stated:

Though I am not a colleague of his, I met [the petitioner] and began to know about his work when I attended the 4th International Conference on Multiphase Flow in New Orleans in 2001. I was very impressed by his presentation at the conference, and also read his paper published in 2006 in Experimental Thermal and Fluid Science.

. . . Being inspired by [the petitioner's] findings in particle motion and distribution, we are going to investigate how the slip-shear lift force affects bio-film growth and fouling, which may explain some . . . phenomena we did not know. [The petitioner's] article also promoted us [*sic*] to start building a similar particle tracking model to study particle

behavior in our processes. In fact, [the petitioner's] contribution in particle behavior close to the wall in wall-bounded two-phase flows speeds up our work and broadens the scope of our research projects.

[redacted] of the University of Waterloo, Canada, stated: "I have no personal or working relationship with [the petitioner]. However, I consider his research activity on two-phase flows . . . to be remarkable."

[redacted], a research scientist at Australia's Commonwealth Scientific and Industrial Research Organization, stated:

I do not know [the petitioner] personally and my assessment is purely based on his scientific research work which he has published in various publications.

. . . My research activity primarily focuses on developing Computational Fluid Dynamic (CFD) models to simulate wall-bounded multiphase flows which prevail in coal-fired power plants. I am the chief reviewer of gas-solid flow papers for the organizing committee of [the] International Conference on Computational Fluid Dynamics in the Process Industries. . . .

[The petitioner's] work has greatly improved our understanding on turbulent boundary layer in gas-solid flows. His work on this topic . . . revealed detailed particle motion and distributions in a vertical turbulent boundary layer which, in my knowledge, have not been studied as comprehensively in any earlier published literature. Hence, this is an original and key contribution to the scientific community.

. . . [The petitioner's] work is impressive in that the experiment clearly demonstrates the importance of slip-shear lift force on the particles and yet the existence of which is commonly ignored in most studies. I should also point out that his research results also helped us validate and improve our own CFD model.

an assistant professor at the University of Maryland, Baltimore County, stated:

While I have not worked with [the petitioner], I was very impressed by his significant and original contribution . . . [The petitioner's] research provided insight into particle motions and distributions inside two-phase boundary layer close to the wall surface. . . . His unique measurement technique for two-phase flow inside the boundary layer is quite a significant contribution, because it extends our horizon to multiphase near-wall behavior which is full of mysteries. . . .

[The petitioner's] exceptional scientific achievements have had a very important impact on multiphase research.

The director denied the petition on March 31, 2008. The director acknowledged the witness letters but observed that the petitioner had not shown frequent citation of his published work. The director stated that the petitioner had not established that he had “influenced [his] field overall to a greater extent than other researchers/engineers in this specialty.”

On appeal, counsel argues that the petitioner’s influence on his field is evidence from the various independent witness letters submitted previously, as well as a newly submitted letter from [REDACTED] an assistant professor at West Virginia University. [REDACTED] states:

I know about [the petitioner’s] contributions from reading his outstanding published works. . . .

Overall, I must state that [the petitioner’s] achievements in multiphase flows and Computational Fluid Dynamics (CFD) are remarkable and had great impact on the field.

. . . His research has important impact on any CFD simulations for multiphase flows within the presence of the wall, by enhancing the accuracy of the law-of-the-wall for different phases in multiphase flows. The wall-bounded turbulent multiphase flows are very common in industrial processes, i.e. power generation, oil, chemical, engine industries and so on. [The petitioner’s] research definitely had impact on my research on the spark ignition (SI) engine.

The AAO acknowledges that the petitioner has not established widespread citation of his published work. At the same time, as an engineer, the petitioner’s specialty is very much an applied science rather than a theoretical one, and therefore it is appropriate to judge the extent to which other engineers have applied the petitioner’s findings in their work. By submitting a number of statements from independent experts around the world, the petitioner has established that, while his work may not be widely cited, it is widely implemented. The petitioner has established that his work has influenced research not only in the HVAC industry, but in divergent fields where fluid dynamics play an important role.

Rather than simply offering vague and general praise for the petitioner’s findings, or for unspecified “promise” at the beginning of the petitioner’s career, the witnesses have demonstrated specific, concrete ways by which the petitioner’s findings have influenced others. Also, the petitioner has not merely showed that his findings are useful – it is reasonable to expect that *all* research findings are useful, as there is little incentive to fund or perform research that produces nothing of use. Rather, the petitioner has demonstrated that his research has facilitated research in other areas that, otherwise, would have been considerably more difficult or even impossible. Thus, the petitioner has demonstrated sufficient impact on his field to qualify for the national interest waiver.

Also important, the petitioner’s ongoing employment continues to involve comparable areas of inquiry. The record does not indicate that the petitioner’s contributions began and ended with his graduate studies, and ceased when he entered private industry. Because the national interest waiver

is intended to secure prospective benefit to the United States, it is important that the petitioner has established the capacity for continuing contributions in his post-academic career.

It does not appear to have been the intent of Congress to grant national interest waivers on the basis of the overall importance of a given field of research, rather than on the merits of the individual alien. That being said, the evidence in the record establishes that the engineering community recognizes the significance of this petitioner's research rather than simply the general area of research. The benefit of retaining this alien's services outweighs the national interest that is inherent in the labor certification process. Therefore, on the basis of the evidence submitted, the petitioner has established that a waiver of the requirement of an approved labor certification will be in the national interest of the United States.

The burden of proof in these proceedings rests solely with the petitioner. Section 291 of the Act, 8 U.S.C. § 1361. The petitioner has sustained that burden. Accordingly, the decision of the director denying the petition will be withdrawn and the petition will be approved.

ORDER: The appeal is sustained and the petition is approved.